REMARKS/ARGUMENTS

In the Office Action, claims 22-26 were rejected under 35 USC 112 as being indefinite for reasons set forth in the Office Action. To overcome these grounds of rejection, claim 22 is amended by deleting the reference to claim 15, and claim 23 is amended by making reference to the piston for angular position as suggested by the Examiner.

Claims 15, 16, 18 and 20-26 were rejected under 35 USC 103 as being unpatentable over Tsukada (US 6,234,119) in view of Breitegger (US 6,827,063) for reasons set forth in the Office Action.

Claims 17 and 19 were said to have allowable subject matter.

The following argument is presented to distinguish the claims from the teachings of the cited art, thereby to overcome the foregoing rejections and to show the presence of allowable subject matter in the rejected claims.

Tsukada teaches a process/apparatus for reversing a two-stroke engine, but without showing incremental transducers/gab.

Breitegger discloses a position/speed sensor arrangement with teeth and a gap defined by two missing teeth. However, there is teaching or suggestion as to how the skilled person could take advantage of the Breitegger system in order to improve a process/apparatus as disclosed by Tsukada in order to reverse the turning direction of a two-stroke engine.

The main object of Breitegger is to provide for a high discrimination of a crank-angle based signal pattern. The system is intended to increase the physical resolution of the number of teeth of a crank shaft trigger wheel which is done by detecting a certain working characteristic of the engine with high time discrimination and with the aid of a time based and angled based crank-angle signal of low angle discrimination. A detected working characteristic is then transformed to a crank-angle basis under interpolation. This allows one to assign to the top dead center of the respective cylinder a freely selectable angle increment under interpolation with high angle discrimination which means a discrimination that is much more exact than the discrimination of the original trigger wheel.

Breitegger on the other hand does not teach anything about two-stroke engines in particular nothing about reversing of the direction of rotation of such an engine. Furthermore, Breitegger does not teach one to sense fluctuations in the angular speed of the crank-mechanism during one single rotation and to assign these functions to a specific transducer segment in order to determine the direction of rotation of the engine from the

relative angular position of this transducer segment with respect to the gap. This feature appears at the end of claim 15.

It is noted also that it is not necessary for the method in accordance with the present invention to have a high discrimination, in particular a discrimination which is higher than the discrimination of the trigger wheel as disclosed by Breitegger.

Therefore, the higher angle discrimination as suggested by Breitegger is of no use in the application of reversing the direction of rotation of a two-stroke engine, but on the other hand it is necessary to determine the relative angular position between the gap and the specific transducer segment which is selected by measuring fluctuations in the angular speed. Breitegger says nothing about the determination of an angular distance between the gap and a certain transducer segment but, on the contrary, suggests in column 2, lines 27 f. to use a trigger wheel without a gap at all.

It makes no difference for the system of Breitegger whether the trigger wheel shows a gap at all unless this gap is used for other purposes which are not part of the disclosure of Breitegger. The determination of a high resolution is done by interpolation from tooth to tooth and it is clear for the skilled person that the presence of a gap may well disturb the method of Breitegger because, in the area of the gap, the interpolation needs to be done not only over the regular distance of 6° but

possibly over 18° if two teeth are missing as is the case with a standard trigger wheel.

On the other hand, in the present invention, it is made clear that the physical resolution of the trigger wheel has no mayor importance. As stated in paragraph 14, it is even suggested to use a trigger wheel with a reduced number of transducer segments, namely 36 in order to reduce the interrupt load of the system by reducing the repetition rate at high rotational speeds. This makes clear the main difference between the system in accordance with Breitegger and the system in accordance with the present invention. While Breitegger uses a high-speed system with the necessity of a fast microprocessor in order to even make an interpolation between two teeth following each other on a standard trigger wheel, the system in accordance with the present invention tries to avoid the interrupt load in order to make use of a simpler data processing unit.

Thus, it is concluded that an attempled combination of the two cited references does not provide a teaching of all the limitations of the present independent claims and their respective dependent claims.

In the event there are further issues remaining in any respect the Examiner is respectfully requested to telephone attorney to reach agreement to expedite issuance of this application.

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Since the present claims set forth the present invention patentable and distinctly, and are not taught by the cited art either taken alone or in combination, this amendment is believed to place this case in condition for allowance and the Examiner is respectfully requested to reconsider the matter, enter this amendment, and to allow all of the claims in this case.

Respectfully submitted
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CERTIFICATE OF MAILING UNDER 37 CFR SECTION 1.8(a)

I hereby certify that the accompanying Amendment is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450, on October 10, 2006.

Dated: October 10, 2006

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